[0052] In a next step **74**, the universal plug and play application **18** instructs the TCP/IP stack A **22** to send data using, e.g., the data( ) function (as shown in FIG. **5***b*) to the further terminal **16**.

[0053] In a next step **76**, the TCP/IP stack A **22** transmits (re-transmits) a data communication signal (shown as a TCP DATA in FIG. **5***b*) to the network **12** (e.g., the access point **14**) according to the known retransmission algorithm (e.g., by doubling the time between retransmissions). In a next step **78**, the network **12** (the interworking function) detects the data communication signal and starts the wake-up process of the terminal B **16** attempting to wake up the terminal B **16** using, e.g., a link layer specific technology (or alternatively when the terminal B**16** polls incoming packets, it notices incoming data and moves to the active state). In a next step **80**, the terminal B **16** is woken up, receives the data communication signal and sends an acknowledgement (shown as the TCP DATA, ACK in FIG. **5***b*) to the terminal A **10**.

[0054] In a next step **82**, it is ascertained whether the acknowledgement is received before expiration of the time period set by the new socket option SO-SNDTIMEO. As long as that is not the case, the connection session is in the undetermined state and is closed in step **84**. However, if it is ascertained that the acknowledgement is received before the expiration of the time period set by the new socket option SO-SNDTIMEO, in a next step **86**, the connection stays on and the terminal B **16** sends a response data communication signal to the terminal A **10**. If the response data communication signal is received by the terminal A **10** before the expiration of the time period set by the new socket option SO-RCVTIMEO, the response data communication signal is accepted and acknowledged by the terminal A **10**, otherwise (if the time period set by the new socket option SO-RCVTIMEO is expired), the connection session is in the undetermined state and should be closed as pointed out above.

[0055] It is noted that the examples presented in FIGS. **2**, **3***a*, **3***b*, **4***a*, **4***b*, **5***a* and **5***b* represent only one implementation utilizing the universal plug and play application A **18** or B **24**, the TCP/IP stack A **22** or B **28** and the Berkeley software distribution (BSD) socket application programming interface (API) **20** or **26**. According to the present invention, alternative implementations can include generally a communication application (the universal plug and play application A **18** or B **24** being only one such communication application), a protocol stack (the TCP/IP stack A **22** or B **28** being only one such protocol stack) and different socket applications facilitated by various APIs different from the BSD API **20** or **26**.

[0056] It is to be understood that the above-described arrangements are only illustrative of the application of the principles of the present invention. Numerous modifications and alternative arrangements may be devised by those skilled in the art without departing from the scope of the present invention, and the appended claims are intended to cover such modifications and arrangements.

1. A method, comprising:

receiving by a terminal a notification about a power saving mode of the further terminal;

providing to a network by a protocol stack of said terminal a communication signal intended for said further terminal by transmitting said communication signal according to a pre-selected procedure for communicating of said terminal with said further terminal through said network in a power constrained environment using a communication application available in said terminal; and

receiving by said terminal, after said further terminal is woken up, an acknowledgement of receiving said communication signal by said further terminal, wherein said terminal waits for said acknowledgement at least for a time interval needed for that further terminal to wake up before terminating said communicating based on a predetermined criterion facilitated by said communication application of the terminal.

2. The method of claim **1**, wherein said power saving mode is a sleeping mode.

3. The method of claim **1**, wherein said communication application is a universal plug and play application, said protocol stack is a TCP/IP stack and there is no connection established between the terminal and the further terminal before receiving by said terminal said notification, and wherein before said providing to said network by said terminal said communication signal, the method comprises:

creating by said universal plug and play application a new socket in the TCP/IP stack of the terminal for communicating with said farther terminal;

setting by said universal plug and play application a new socket option SO-CONTIMEO defining in said TCP/IP stack a time limit for establishing said connection with said further terminal; and

instructing said TCP/IP stack by said universal plug and play application to establish said connection with said further terminal.

4. The method of claim **3**, wherein said communication signal is provided to said network in response to said instructing, said communication signal is a connection communication signal for establishing of said connection, said acknowledgement is an acknowledgement for establishing a successful connection between said terminal and said further terminal and said time interval is defined by said time limit defined by said new socket option SO-CONTIMEO.

5. The method of claim **1**, wherein said communication application is a universal plug and play application, said protocol stack is a TCP/IP stack and there is no connection established between the terminal and the further terminal before receiving by said terminal said notification, and wherein before said providing to said network by said terminal said communication signal, the method comprises:

creating by said universal plug and play application a new socket in the TCP/IP stack of the terminal for communicating with said further terminal; and

instructing said TCP/IP stack by said universal plug and play application to establish said connection with said further terminal.

6. The method of claim **5**, wherein said communication signal is a connection communication signal which initiates establishing of said connection and said acknowledgement is an acknowledgement for establishing a successful connection between said terminal and said further terminal and wherein said providing to said network by said terminal said communication signal comprises:

providing to said network by said terminal said communication signal in response to said instructing by re-transmitting said communication signal according to said pre-selected procedure;

receiving a time-out error by said universal plug and play application;